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FIGURE 1

SIP Address Prefix to Set Precedence

Call Precedence	SIP Call Prefix	Resource-Priority Header Value	DiffServ Value (decimal)	ToS Byte Value (decimal)
Routine	*91*	dsn.routine	46	184
Priority	*92*	dsn.priority	45	180
Immediate	*93*	dsn.immediate	44	176
Flash	*94*	dsn.flash	43	172
Flash- Override	*95*	dsn.flash-override	42	168

FIGURE 18

ToS Values For Call Packets (Priority Queue)

Call Precedence	DiffServ Value (decimal)	ToS Byte Value (decimal)	Maximum Number Queued
Routine	46	184	24
Priority	45	180	28
Immediate	44	176	32
Flash	43	172	36
Flash-Override	42	168	40

FIGURE 2

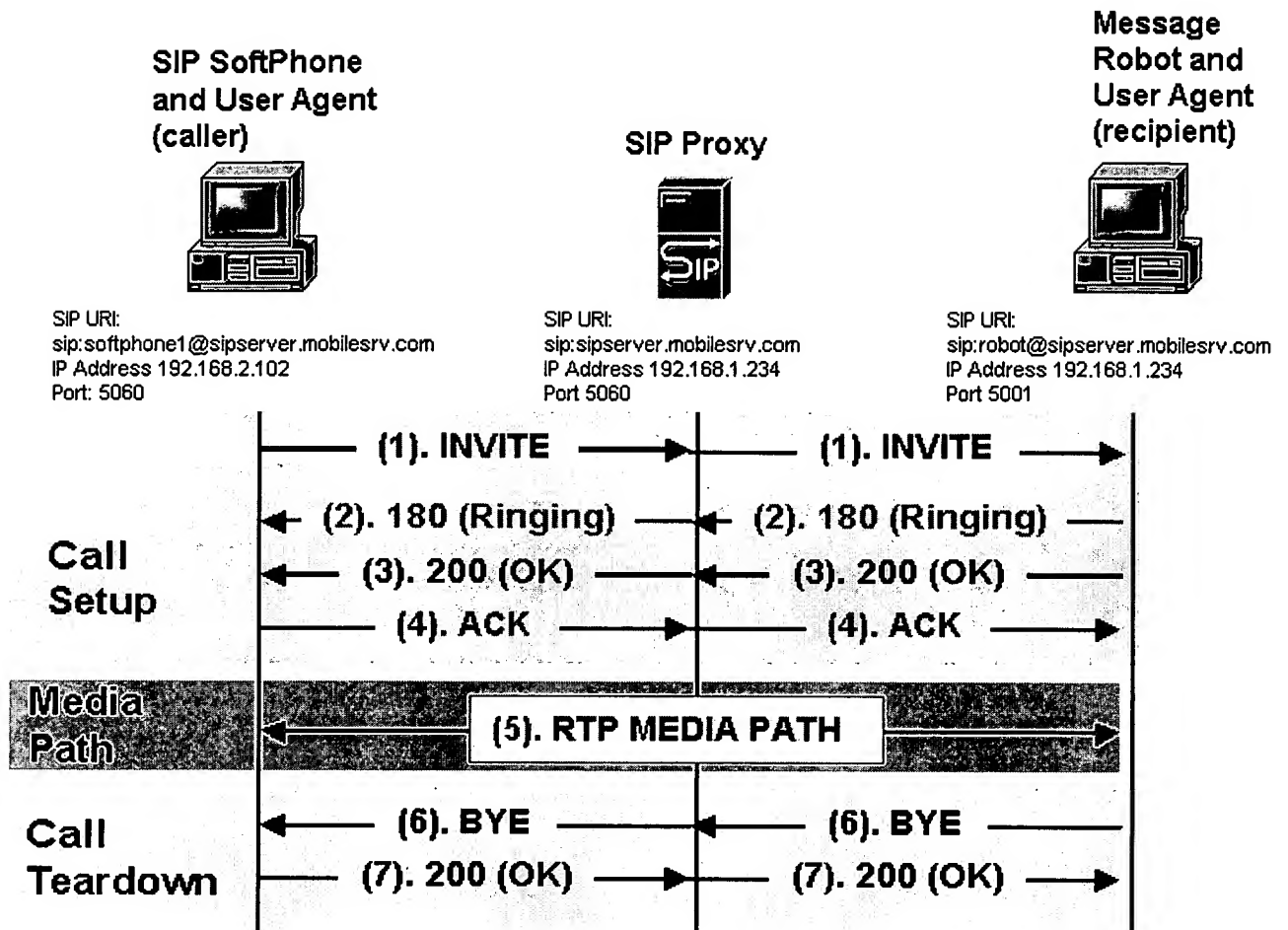


FIGURE 3

```
INVITE sip:*92*robot@sipserver.mobilesrv.com:5060 SIP/2.0
Via: SIP/2.0/UDP 192.168.2.102:5060
From: softphone1<sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot<sip:*92*robot@sipserver.mobilesrv.com:5060>
Call-ID: 103b0c00cccccccccccccccccccccccc@192.168.2.102
CSeq: 1 INVITE
Subject: VovidalINVITE
Contact: <sip:softphone1@192.168.2.102:5060;user=phone>
Content-Type: application/sdp
Content-Length: 216

v=0
o=- 32130 32130 IN IP4 192.168.2.102
s=VOVIDA Session
c=IN IP4 192.168.2.102
t=3249381219 0
m=audio 10000 RTP/AVP 0 100
a=rtpmap:0 PCMU/8000
a=rtpmap:100 telephone-event/8000
a=ptime:20
a=fmtp:100 0-11
```

FIGURE 4

```
INVITE sip:robot@192.168.1.234:5001;user=phone SIP/2.0
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKld3ecaf6733964c4dcfa9cc40adb098c3
Via: SIP/2.0/UDP 192.168.2.102:5060
Record-Route: <sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234>
From: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot <sip:robot@sipserver.mobilesrv.com:5060>
Call-ID: 103b0c00cccccccccccccccccccccccc@192.168.2.102
Resource-Priority: dsn.priority
CSeq: 1 INVITE
Contact: <sip:softphone1@192.168.2.102:5060;user=phone>
subject: VovidalINVITE
Content-Type: application/sdp
Content-Length: 216

v=0
o=- 32130 32130 IN IP4 192.168.2.102
s=VOVIDA Session
c=IN IP4 192.168.2.102
t=3249381219 0
m=audio 10000 RTP/AVP 0 100
a=rtpmap:0 PCMU/8000
a=rtpmap:100 telephone-event/8000
a=ptime:20
a=fmtp:100 0-11
```

FIGURE 5

```
SIP/2.0 180 Ringing
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKld3ecaf6733964c4dcfa9cc40adb098c3
Via: SIP/2.0/UDP 192.168.2.102:5060
To: *92*robot<sip:robot@sipserver.mobilesrv.com:5060>
From: softphone1<sip:softphone1@192.168.2.102:5060;user=phone>
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 1 INVITE
Content-Length: 0
```

FIGURE 6

```
SIP/2.0 180 Ringing
Via: SIP/2.0/UDP 192.168.2.102:5060
From: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot <sip:*92*robot@sipserver.mobilesrv.com:5060>
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 1 INVITE
Content-Length: 0
```

FIGURE 7

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKld3ecaf6733964c4dcfa9cc40adb098c3
Via: SIP/2.0/UDP 192.168.2.102:5060
To: *92*robot<sip:robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
From: softphone1<sip:softphone1@192.168.2.102:5060;user=phone>
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 1 INVITE
Record-Route: <sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234>
Contact: <sip:robot@192.168.1.234:5001>
Content-Type: application/sdp
Content-Length: 170

v=0
o=- 3249384273 3249384273 IN IP4 192.168.1.234
s=VOVIDA Session
c=IN IP4 192.168.1.234
t=3249384273 0
m=audio 10100 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

FIGURE 8

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP 192.168.2.102:5060
Record-Route: <sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234>
From: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot <sip:*92*robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 1 INVITE
Contact: <sip:robot@192.168.1.234:5001>
Content-Type: application/sdp
Content-Length: 170

v=0
o=- 3249384273 3249384273 IN IP4 192.168.1.234
s=VOVIDA Session
c=IN IP4 192.168.1.234
t=3249384273 0
m=audio 10100 RTP/AVP 0
a=rtpmap:0 PCMU/8000
a=ptime:20
```

FIGURE 9

```
ACK sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234 SIP/2.0
Via: SIP/2.0/UDP 192.168.2.102:5060
From: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot <sip:*92*robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 1 ACK
Route: <sip:robot@192.168.1.234:5001>
Content-Length: 0
```

FIGURE 10

```
ACK sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234 SIP/2.0
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKlf4cb1970e036f7c7d87c26a166737392
Via: SIP/2.0/UDP 192.168.2.102:5060
Record-Route: <sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234>
From: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
To: *92*robot <sip:robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
Resource-Priority: dsn.priority
CSeq: 1 ACK
Content-Length: 0
```

FIGURE 11

```
BYE sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234 SIP/2.0
Via: SIP/2.0/UDP 192.168.1.234:5001
To: softphone1<sip:softphone1@192.168.2.102:5060;user=phone>
From: *92*robot<sip:robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 2 BYE
Max-Forwards: 70
Route: <sip:softphone1@192.168.2.102:5060>
Content-Length: 0
```

FIGURE 12

```
BYE sip:192.168.1.234:5060;transport=UDP;maddr=192.168.1.234 SIP/2.0
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKI7b3f7ed10682a309743433d45e4ab589
Via: SIP/2.0/UDP 192.168.1.234:5001
Route: <sip:softphone1@192.168.2.102:5060>
From: *92*robot <sip:*92*robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
To: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 2 BYE
max-forwards: 70
Content-Length: 0
```

FIGURE 13

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP 192.168.1.234:5060;branch=z9hG4bKI7b3f7ed10682a309743433d45e4ab589
Via: SIP/2.0/UDP 192.168.1.234:5001
From: *92*robot<sip:*92*robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
To: softphone1<sip:softphone1@192.168.2.102:5060;user=phone>;tag=ec6f0a00
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 2 BYE
Content-Length: 0
```

FIGURE 14

```
SIP/2.0 200 OK
Via: SIP/2.0/UDP 192.168.1.234:5001
From: *92*robot <sip:robot@sipserver.mobilesrv.com:5060>;tag=2c0343a6
To: softphone1 <sip:softphone1@192.168.2.102:5060;user=phone>;tag=ec6f0a00
Call-ID: 103b0c00cccccccccccccccccccc@192.168.2.102
CSeq: 2 BYE
Content-Length: 0
```

FIGURE 15

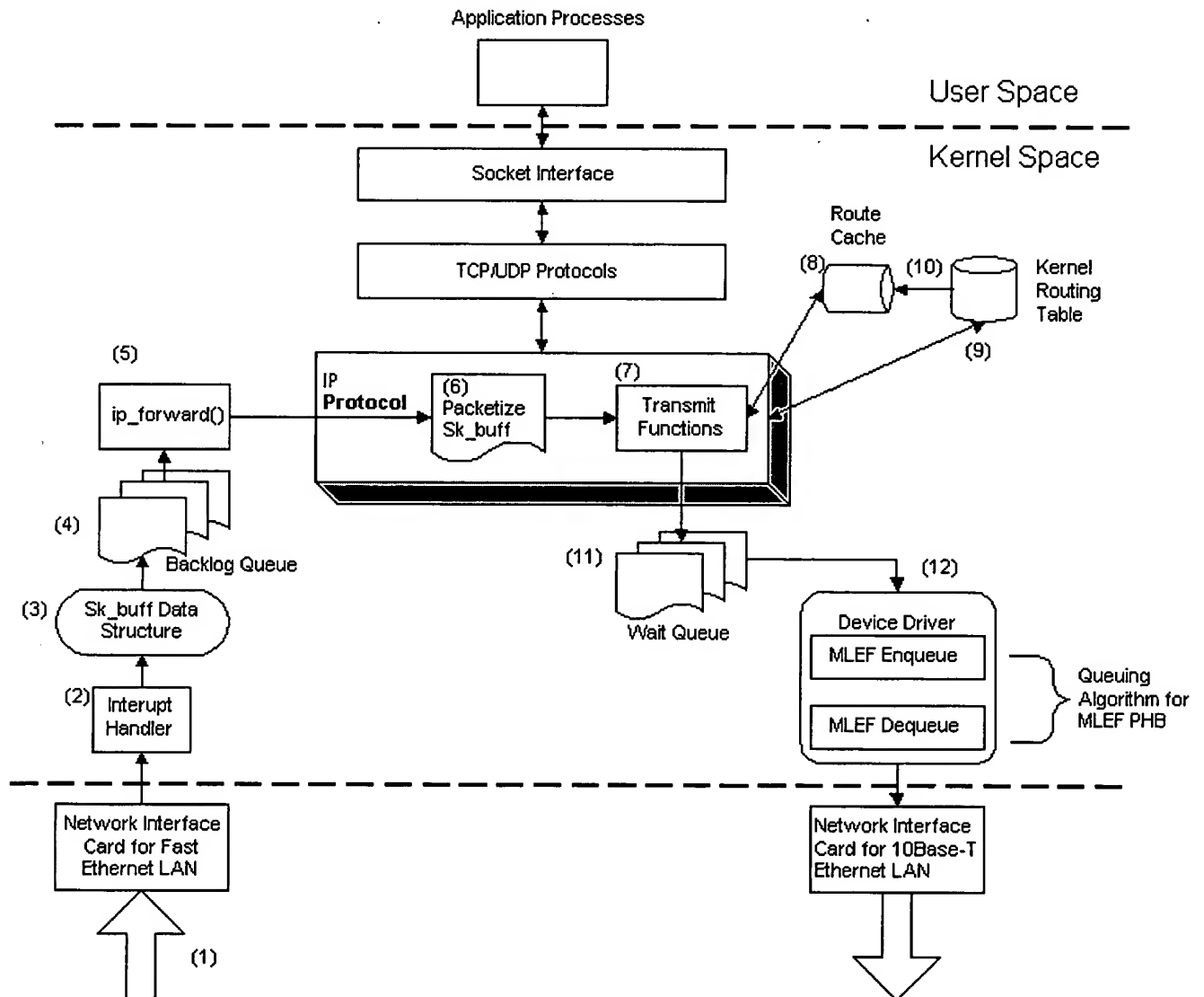


FIGURE 16

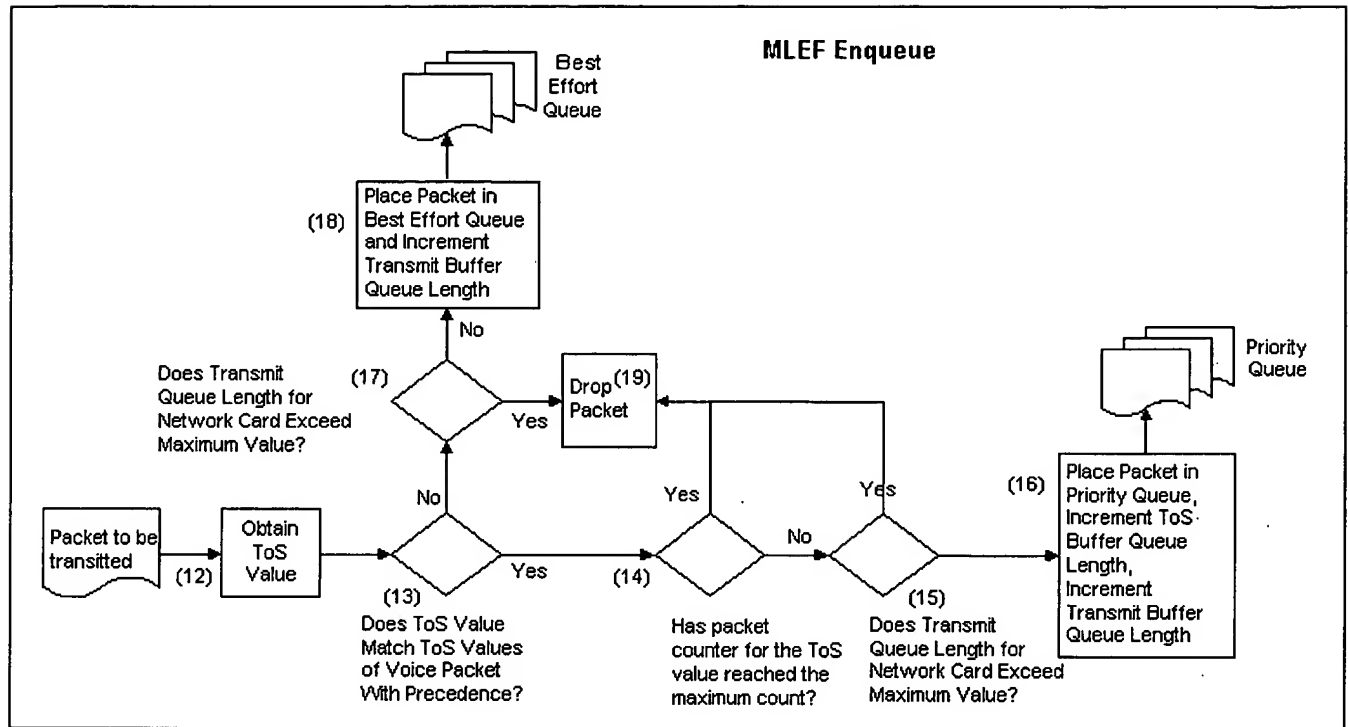


FIGURE 17

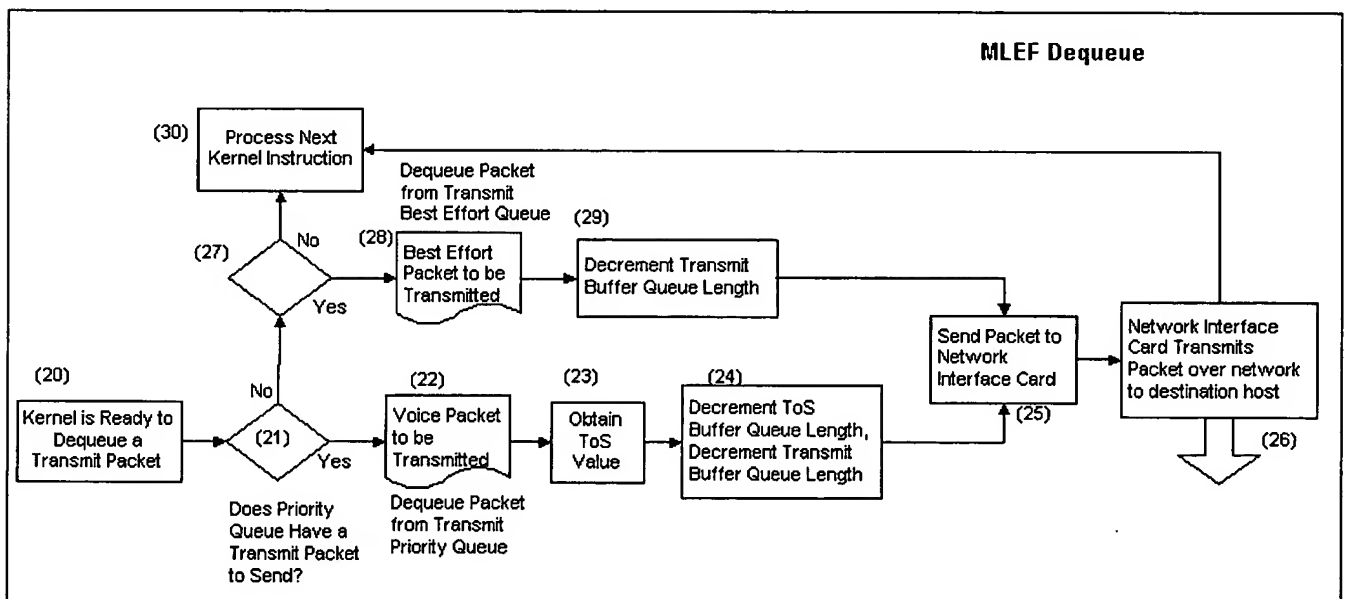


FIGURE 19

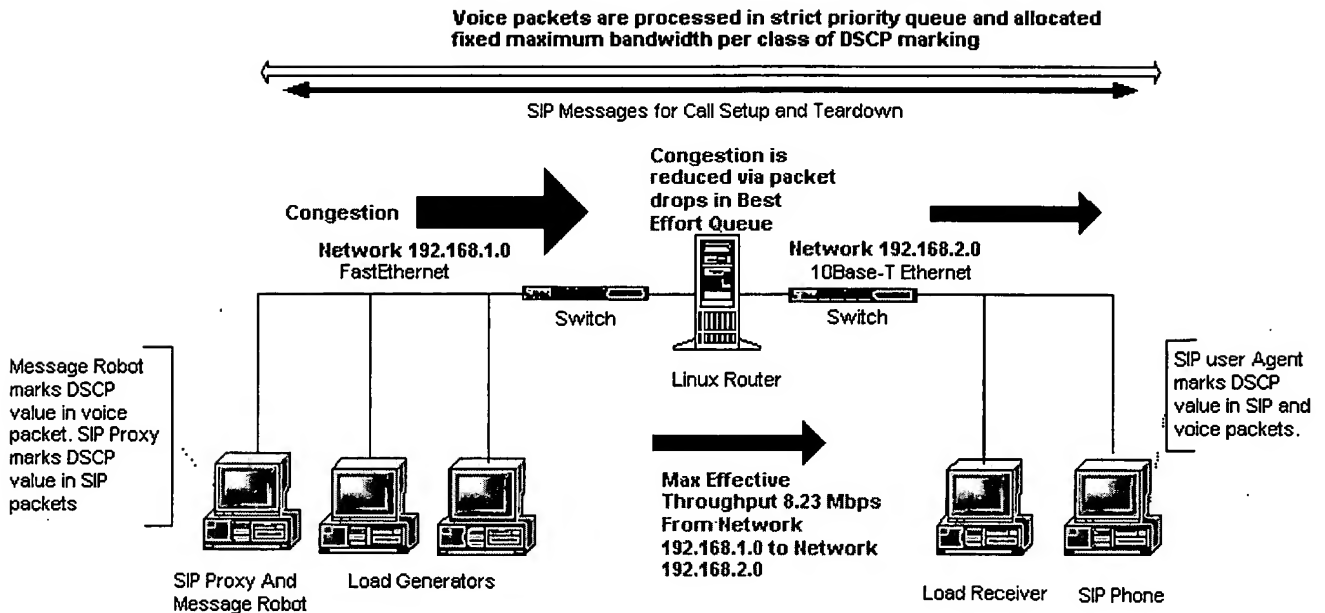


FIGURE 20

Congestion In Priority Queue

Metric	Results
Number of Priority Packets Sent From Message Robot to MLEF Router	3075
Number of Priority packets Forwarded By MLEF Router to Caller SIP Phone	3075
Number of Priority Packets Dropped By MLEF Router	0
Number of Routine Packets Sent From Load Generators (congestion) to MLEF Router	388216
Number of Routine Packets Forwarded By MLEF Router to Load Receiver	274392
Number of Routine Packets Dropped by MLEF Router	113824
Percentage Drop of Routine Packets	29.32%